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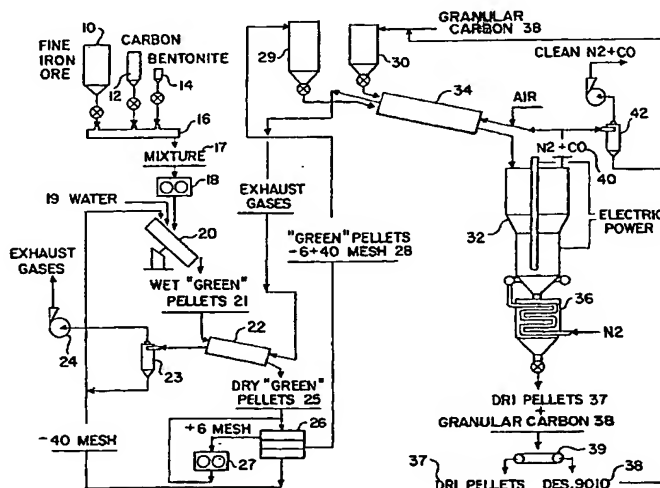
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(54) Title: PROCESS AND APPARATUS FOR THE DIRECT REDUCTION OF IRON OXIDES IN AN ELECTROTHERMAL FLUIDIZED BED AND RESULANT PRODUCT



(57) Abstract: A method and an apparatus (50) for producing direct reduced iron (37) from dry pellets (25) composed of iron oxide and carbonaceous material. A mixture of pellets (25) and free coke particles (38) with weight relation from 3:1 to 5:1 is fed into the top of an electrothermal fluidized bed (32) that is fluidized by nitrogen. By exposing pellets (25) in the electrothermal fluidized bed (32) to temperatures of between approximately 850-1,100°C for an average period of between approximately 15-60 minutes, the volatiles are removed and the pellets (25) metallized. Reduced pellets (37) mixed with free coke (38) are discharged from the bottom of fluidized bed (32) and cooled. The reduced iron pellets (37) are physically separated from any free coke (38) and the free coke (38) is recycled back into the fluidized bed (32).